

Note Book

C. A. Reed.

Collector

June & July 1895

U. S. Geological Survey

**STANDARD**

Arbuckle  
Mts.  
Okla.



PERFORATED AND STAPLED.



## Sections

Basal Simpson sandstone	63
Contact w. v. Arbuckle	63
Cool Creek, east of Springer	57-59
McClellan ranch house near Bromide	65-66
Mill Creek (up. Arbuckle)	67, 68
Neb. N + E of Springer	60, 61
Oil Creek - Low. Simp. & up. Arb.	62½
Ozarkian in House Sp. section	56
Rockville (Ark) 3 m. E of	48-49
Springer - N of	29-47
Ulrich's generalized section	27-28
Up. Arbuckle - 10, 14, 29 to 35, 64, 68	
Up. " Graptolites	10
" " Ostracoda	14
Wyatt to Baum	62
West Spring Creek section	48-49



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Contact " + Arbuckle	63
Cool Creek, east of Springer	57-59
McChes ranch house near Bromide	65-66
Mill Creek (up. Arbuckle)	67, 68
Nobo. N + E of Springer	60, 61
Oil Creek - Lower Simp, + up. Arb.	62½
Ozarkian in House Cr. section	56.
Poolville (Elk) 3 m. E of	48-49
Springer - N of	29-47
Ulrich's generalized section	27-28
Up. Arbuckle	10, 14, 29 to 35, 64, 67
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### Calendar

June 15 1908. Received letter from Dr. E.O. Ulrich, Woodbury Penn, stating, authority had been granted to employ me as collector on the U. S. Geological Survey, June 10th to July 31 1908. Employment blanks were received, filled out and returned to Washington D.C. on this date.

Field of Work.— Instructed to collect from best localities in Simpson and Arbuckle formations, "somewhere between Elk and Berwyn ---- and south of the wooded hills," i.e. south side of Arbuckle mts. west of Washita River.

June 16th.

Made hasty preparations and left Norman, Okla. for Springer, Okla. on 3:05 P.M. Santa Fe train via Oklahoma City, Holdenville, Madill and Ardmore.



June 17th.

Arrived in Ardmore 9 P.M. Stopped with Everett Noble.

June 18th.

Hired livery rig to take me to south bank of Caddo Creek. Crossed stream in skiff and rode in waggon to within two miles of Springer, which distance I walked with baggage. Arrived in Springer on foot 12:30 P.M. After dinner walked  $2\frac{1}{2}$  to 3 miles north of Springer and endeavored to correlate Dr. Ulrich's generalized section of the lower Arbuckles with the formations which I saw before me. - Easily distinguished Viola, had some difficulty in finding fine sandstone members in the Simpson, in fact the basal one, (1st) which rests upon the Arbuckle formation, was not found until my own section had been made.

Returned to "Springer Hotel" by 7 P.M.

2)

June 19th.

Walked out to the ground I had gone over Thursday afternoon. After debating for a time concluded best to make detailed section of Simpson and Upper Arbuckle, in order that I may definitely locate the many fossil horizons of those formations. Began making section by starting with thin sandstone which I thought was the base of the Simpson, and worked north (down) in the Arbuckle limestone & shales some 250-300 feet. Here I found a local sandstone 2-4" thick in a shaly band. This is the lowest s.s. that is to be seen here for many ls. west to the north (downward). With such a start I crossed small tributary of Tulip Creek to another ridge  $\frac{1}{4}$  mile to the east. Here, I began with the 2-4" local sandstone and went up in the section. My measurements corresponded exactly with what I had made  $\frac{1}{4}$  mile to the west, so I continued

3)



June 20th

detailed sectioning on up into the Simpson. Later, I found, that my first assumption about the basal sandstone of the Simpson was not well drawn. The base of the Simpson was not clear in my mind until some three weeks later when I happened by chance to find <sup>along Henry House Creek</sup> a graptolite horizon - in uppermost 300' of Ambush formation. I returned to my Springer locality and verified in "The Springer section", which appears below, my mistake.

June 21st. Sunday, at Springer Hotel. Had to be careful since I was pretty well run down after nine months of exacting indoor work. Worked out section in Note book

June 22nd to  
June 25th.

Concluded making of section and collections from Springer section.

June 26th. Ardmore and return.

June 27th.

Mail hack, Springer to Woodford. Dinner at Glenn, Woodford 3 P.M. Walked out northeast of Woodford along fault line to Simpson. S.W.  $\frac{1}{4}$  Sec. 24 T.2 S., R.1 W. and parts of surrounding sections, level basin of Simpson at end of fault line. No good exposures. ~~farmed~~. Dip of strata possibly 15°. Decided to ride horse back <sup>the next day</sup> since the section equal to the <sup>length of the</sup> Springer section was drawn out for at least a mile & then I need to find better exposures in order to make a good section.



June 28th.

Rode Dr. Paylor's horse, "Old Baldy" up Vickory Creek to Hugh Wallace's on Simpson formation. Photographed valley, green sh. and thin bedded ls. in upper 400' of Simpson from 4th o.s. ledge near his house. One gets a good view of the Viola escarpment from this point. Rode through <sup>to the west</sup> pastures, along escarpment, until south of the Russell house, S.W. 1/4 sec. 22, T. 2 S., R. 1 W. Collected few fossils from thin bedded limestones in Simpson just below base of Viola. Crossed Simpson to upper embuchle at right angle to strike of strata past Russell farm house. Mr. Russell took me for a horse thief upon inquiring how to get into the big pasture since he knew the horse but ~~not~~ not me.

The numerous strata so well represented <sup>of upper</sup> north were very poorly exposed here. Only a general section could be made at best. I concluded it best to move on to Elk. A small collection

was made, the larger portion of which was collected from the thin bedded limestones and green shales just beneath the base of the Viola on the west bank of Vickory Creek. Some views of Simpson topography were taken.

June 29th. Monday.

It rained most all day, kept me indoors. The mail hack did not come down from Poolville or Elk since Spring Creek was out of its banks. Staid at The Mills Hotel.

June 30th.

Visited asphalt mines near Woodford before going with mail-hack driver to Poolville. Dinner in Woodford. Poolville 6:30 P.M.



July 1st.

Since no horse was to be had in Pothville walked east from town, across Permian Red Beds, to Simpson and Arbuckle exposures. where these formations were first seen, SW  $\frac{1}{4}$ , NE  $\frac{1}{4}$  sec. 36 T. 1 S., R. 2 W. at road crossing the exposures of stone was very scattering in the high luxuriant grass. Dip  $10^{\circ}$  to  $5^{\circ}$  N. approximately. A round up took place here which afforded me a chance to meet a few of the native cowboys and learn something of the country.

As I moved <sup>south</sup> east down the road to West Spring Creek I found certain members of the Simpson to be well exposed. They are shown in the section which is given elsewhere (p. 48-49) in this book. Since I could get to stay all night out here I walked 4 miles back to Pothville.

July 2nd. }

July 3rd }

Concluded work in West Spring Creek section given later in this book. Staid with D.C. Jones. N.W.  $\frac{1}{4}$  sec. 6, T. 2 S., R. 1 W.

July 4th.

Took collection to Ardmore in wagon with D.C. Jones. Rode 28 miles by 11:35 A.M. Caught Santa Fe 11:37 A.M. North to Norman. 6 months University salary was finally paid, so had to go to Norman to pay outstanding bills.

July 5th. Sunday, Norman, Okla.

July 6th, Left Norman for Springer Okla.

July 7th. Left Springer for Henry House Creek, horseback.

July 8th } made section & collection just east  
July 9th } of Henry House Creek. Staid with Tom Wagon. See section below.

July 10th.

Left Wagon's SW  $\frac{1}{4}$  sec. 20, T. 2 S., R. 1 E. for Royer's Headquarters ranch NE  $\frac{1}{4}$  sec. 25 T. 1 S., R. 1 E. up Henry House Creek



made three small collections from middle portion of Arbuckle and one from limestone in Reagan.

July 1, th. Royer Ranch on Honey Creek.

Arose 3 A.M. since cowboys were to drive cattle to Berwyn to ship. As soon as it was day light made collection from limestone and shaly bands in upper Reagan for this ranch house is just west of East Timbered Hills south of Honey Creek on upper Reagan. Just before noon found thin liny members in basal 400 ft. which occasionally bear trilobites. Before and not long after noon made three collections from this horizon. About the middle of the afternoon started southeast toward Springer following the road. The 400' of dolomite, rather coarse, weathers dark, which

I noticed just to the right and above me in the vicinity of the East Timbered Hills, took a southeast course towards Berwyn. As I moved along the road I noticed it persisted with thin liny and shaly members of considerable width forming shallow swales or valleys with but few ledges of rock outcropping. The dolomitic layer was crossed where the road joins in the S.W. <sup>4</sup> sec 7 T. 25, R. 2 E. The road ~~occupies~~ runs along the thin beds of the "2000' more or less cherty limestone, thin beds below" just above the dolomitic band. until it turns S.W. across the the upper Arbuckle from Cool Creek. Approximately a mile east of where the road turns S.W. out of Cool Creek, the Arbuckle strata have been subjected to great stresses since they are folded & twisted much. especially N.E. <sup>1</sup>/<sub>4</sub> sec. 26. T. 25, R. 2 E. a few fragments of trilobites were found just above dolomitic 400' at



Bob Sivil's ranch house on Cool  
Creek.

July 12, Sunday, at Springer Hotel.

July 13th. Revisited site of Springer section  
and examined <sup>upward</sup> 0-500' of Arbuckle ls.  
for Graptolites. I was successful  
in finding a large handful of  
them in <sup>a blue phaly</sup> stone. A good site for  
the <sup>"400' "</sup>green shales & thin bedded ls.  
at the top of the Simpson, having been  
noticed when on my way to make  
the Henry House Creek section  
~~was~~ just west of Tulip creek  $\frac{1}{4}$   
mile west of where the former  
section was made, I made  
a section & collections from this  
locality.

July 14th.

Rode N.E. of Springer on road  
to Cool Creek. Measured thickness  
of Simpson exposures of strata and  
upper part of Arbuckle. Cooked and  
ate dinner at Sivil's ranch house.  
Collected a few fragments of trilobites  
from thin bedded ls. 50' above  
coarse dolomitic 400' layer. Rode  
several miles east, took photograph  
of concretionary weathering of dolomite  
and noticed folding & twisting of  
thin bedded strata.

Rec'd from Mr. E.O. Ulrich a letter which  
stated that the plans of Drs. Hayes, Taff &  
Ulrich, i.e. to meet me about the 15th west  
of the Washita, had been disarranged.

Will probably get to Wapamucka on the 23rd.

Mr. Ulrich directed me to go to Ravia  
and work Simpson-Arbuckle contact  
northwest until July 20 or 21st when  
I should proceed to Wapamucka. There  
collect from basal Caney shale & upper beds of Woodford



Note carefully stratigraphy of these  
beds near contact of these formations

July 15th.

Left Springer with collections for  
Ravia via Ardmore and Madill.

Left collections with Mr. Everett Noble of  
Ardmore, to be packed & shipped when  
I shall have finished collecting  
July 31st 1908.

July 10th.

Secured horse from a Mr. R. L.

Johnson, a cow man, residing  
in southeast Ravia. Rode north  
and west crossing Millcreek just  
above old mill. Crisscrossed  
Simpson and upper Arbuckle shaly  
members 10 times in going  
to Wyatt or "Cot town" - local name.  
Noted good exposures for section  
1 mile west of Mill creek; on both

sides of Sycamore Creek, possibly  
1/2 mile in each direction i.e. east &  
west. There were only partial exposures  
along Oil Creek and on wagon road  
leading south from Wyatt towards  
Barnum.

In the exposure one mile west  
of Mill Creek the section was  
examined carefully for the presence  
of fossils and the various members  
recognized in the detailed section  
made north of Springer, west of the  
Washita River. Five prominent  
sandstone ledges were noticed, the  
same as in the Springer section.

The basal one, however, was very  
much thickened, being 51 steps  
across with a dip to the south  
of 85°. The other members of the  
Simpson were closely identifiable  
with those measured in the Springer  
Section. The 0-500' of local beds of  
shales - shaly ls. [Ulrich's general section]



immediately below the ~~to~~ basal sandstone. Have occasional thin strata bearing ostracods as found in the Springer section. Sandstone bands corresponding to those measured in the Springer section in the upper Arbuckle are persistent although thin as there.

The work to day was chiefly reconnaissance, my object being to look up places where fine sections might be made on my return to Ravia.

July 17th. Made section of Simpson part Nebo along section line through town for that above 2nd sandstone member of Simpson. For the Simpson below 2nd sandstone and the upper Arbuckle made section along section line 1 mile north of Nebo and west of Oil Creek. The contact of the Simpson and Arbuckle is covered

in every place except where made in the Oil Creek valley. See section below.

July 18th.

Returned from Wyatt to Ravia along Simpson - Arbuckle contact taking measurements and making a collection one mile west of Mill Creek. See below.

July 19th.

At Ward's in Ravia, Okla. Transcribing notes made in field to permanent note book.

July 20th.

Left Ravia for Wagonmaka. Paid 40¢ Express on box of fossils shipped from Mill Creek from Nebo. Livery Ravia to Tishomingo \$1.50. Wagonmaka 10 A.M. found on arriving that

15) Dayer, Taff and Ulrich were registered at



O'Neil Hotel. Mr. Hayes left last evening for the West and Messrs Taff & Which were out in a buggy to Bromide Springs & neighborhood northwest. ~~Taff~~ Remained in town since could not get horse to ride. Transcribed notes into permanent note Book for Mr. Which. July 21st.

Drove out of Wagonmucka with Dr. Taff & Which over Atoka Wagonmucka ls. Carey shab. collected fossils from the Woodford in the N.E.  $\frac{1}{4}$  of the N.E.  $\frac{1}{4}$  sec. 28 T. 15. R. 8 E. also from the Woodford-Hinton contact near a spring N.E.  $\frac{1}{4}$  sec 21, T. 15. R. 8 E. The New Scotland horizon of the Hinton formation was seen in an escarpment in the N.E.  $\frac{1}{4}$  of sec 20, T. 15. R. 8 E. The soluble

base of the Hinton, the Sylvan shale and the top of the Viola ls. were examined in sec. 20, T. 15. R. 8 E. Weather turned toward Wagonmucka through the Delaware bottoms. It was in this bottom that we were compelled to walk for some distance since the mud pulled the horses so hard. Collections were made from formations noted. July 22nd.

Office work at Wagonmucka Okla. Left for Ardmore on 6.15 P.M. train C.R. I. & R.

July 23rd.

Ardmore Okla. Whittington Hotel Took Dr. Which over to Dr. Henry, oculist for treatment of injured eye. A very heavy rain fell during the morning. In the afternoon started to rewrap and pack my collections (17) which had been assembled at Everett Miller's



July 24

Concluded packing of collection and arranged for the shipment of them to Washington D.C.

July 25. Went with Dr. Ulrich and Buff and Mr. Reed to the Criner Hills southwest of Ardmore.

July 26. Rode horse back from Ardmore to Criner Hills to make collections from some formations seen on the previous day.

July 27th. Repacked in barrel and keg parts of my collection which had been packed in two mail bags. Left Ardmore at 12:01 P.M. St. L. & S.F. R.R. via Madill and Ravia to Pishimingo, Okla. While at Ravia I shipped a collection box which had

been previously collected to Washington D.C.

July 28th.

Left Pishimingo for Wagonwheel. Hired saddle horse and rode northwest past Bromide, Okla. to the Simpson-Viola transition series on the M.C. Clisk ranch.

July 29th.

Collected from Simpson-Viola transition series south of M.C. Clisk ranch house.

July 30th.

Resumed work of previous day until late in the afternoon when I rode past Minimus horizon near base of Hutton ls. N.E.  $\frac{1}{4}$  sec 20 T15. R8E. about 1 m. S. of Hutton R.O. as given in Atoka folio (79)



July 31st/98 Wapamoka Okla.  
Packed collection made from  
the Simpson-Viola transition series  
& Trenton formation and shipped  
same to Washington D.C.

Boarded train at 10 A.M. for  
Norman Okla via Haileyville &  
Oklahoma City.

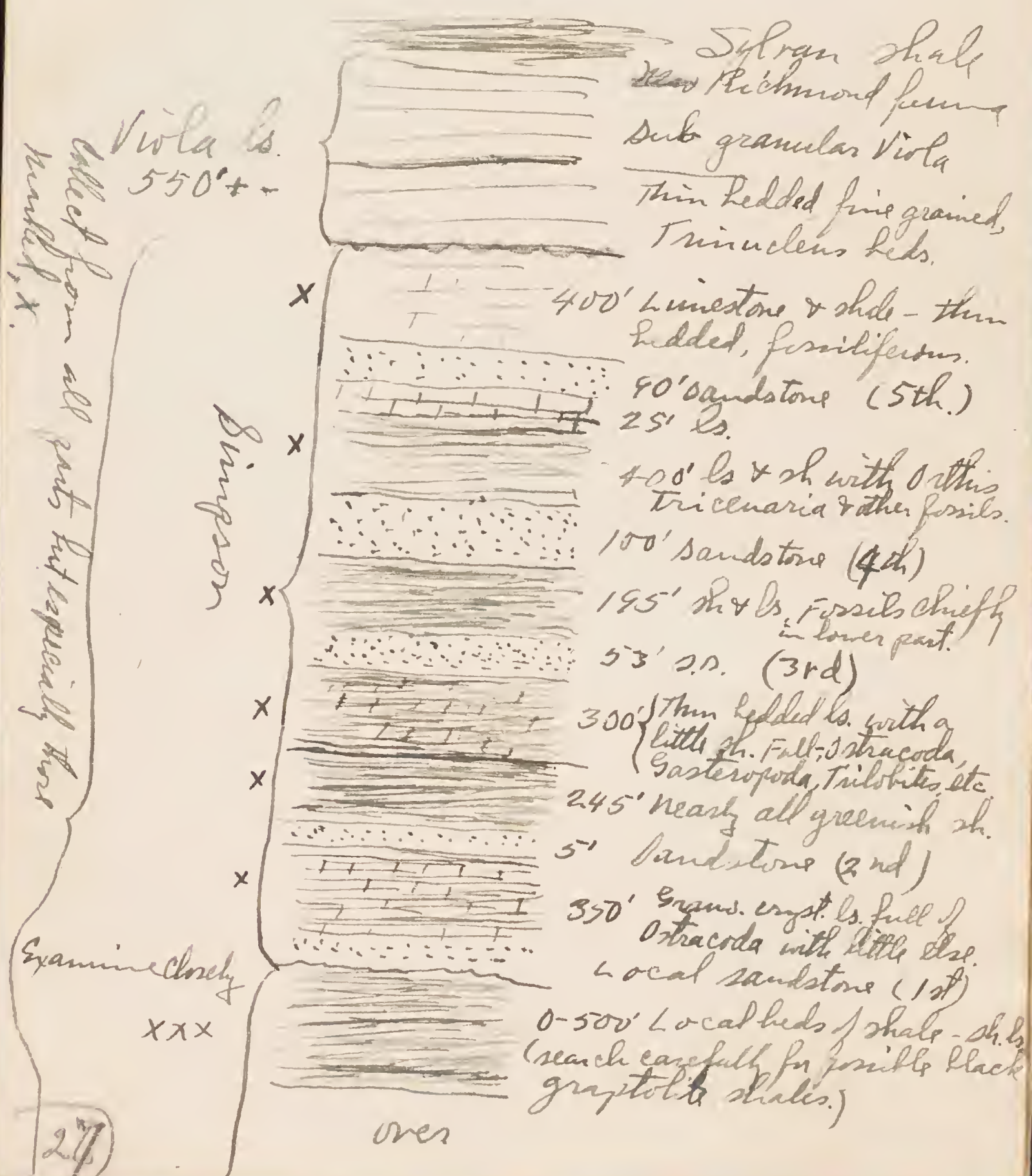
This concludes the calendar  
for six weeks of very interesting  
work as collector, under the  
direction of Dr. E. O. Ulrich, U. S.  
Geological Survey Washington D.C.







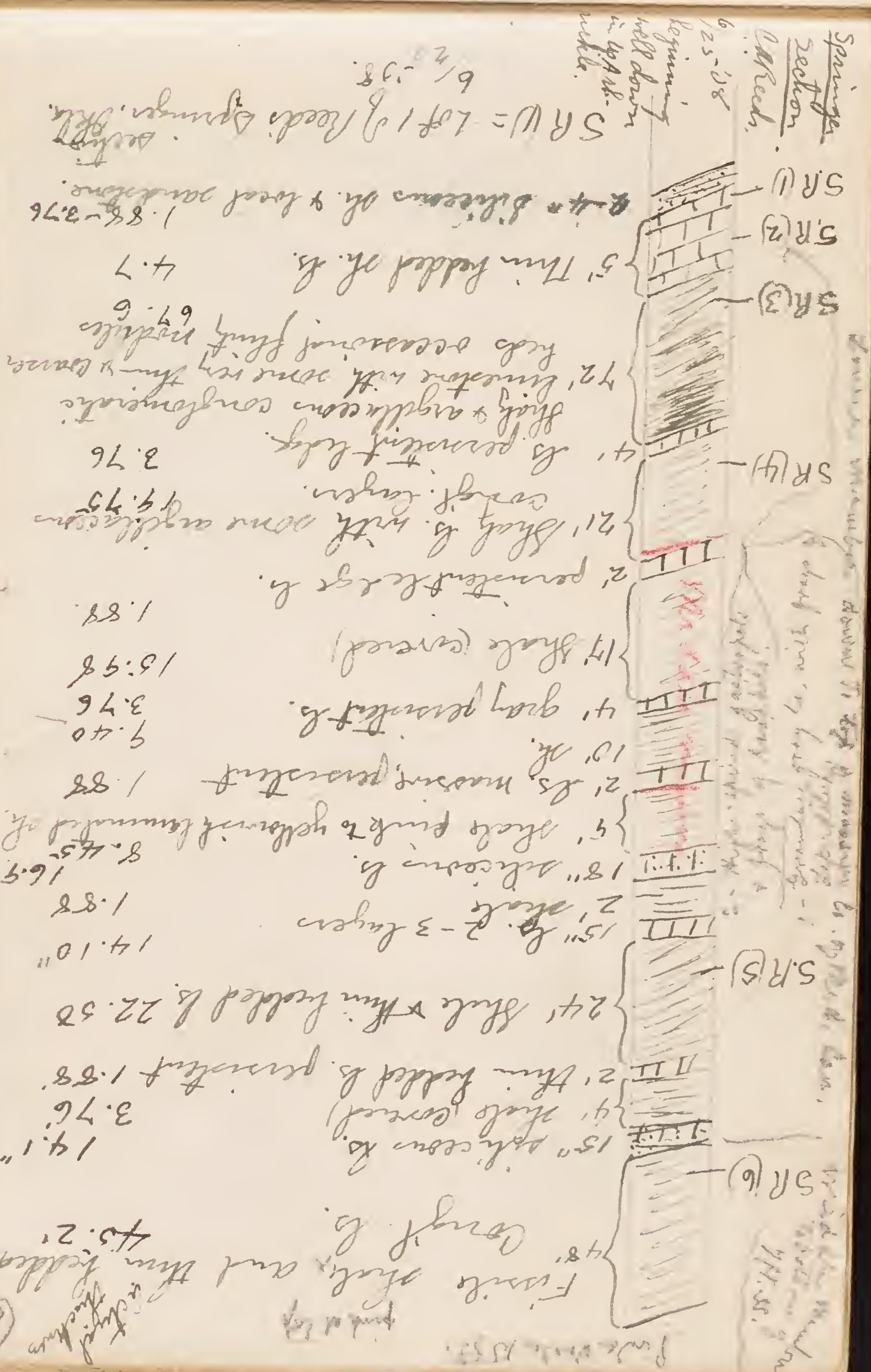
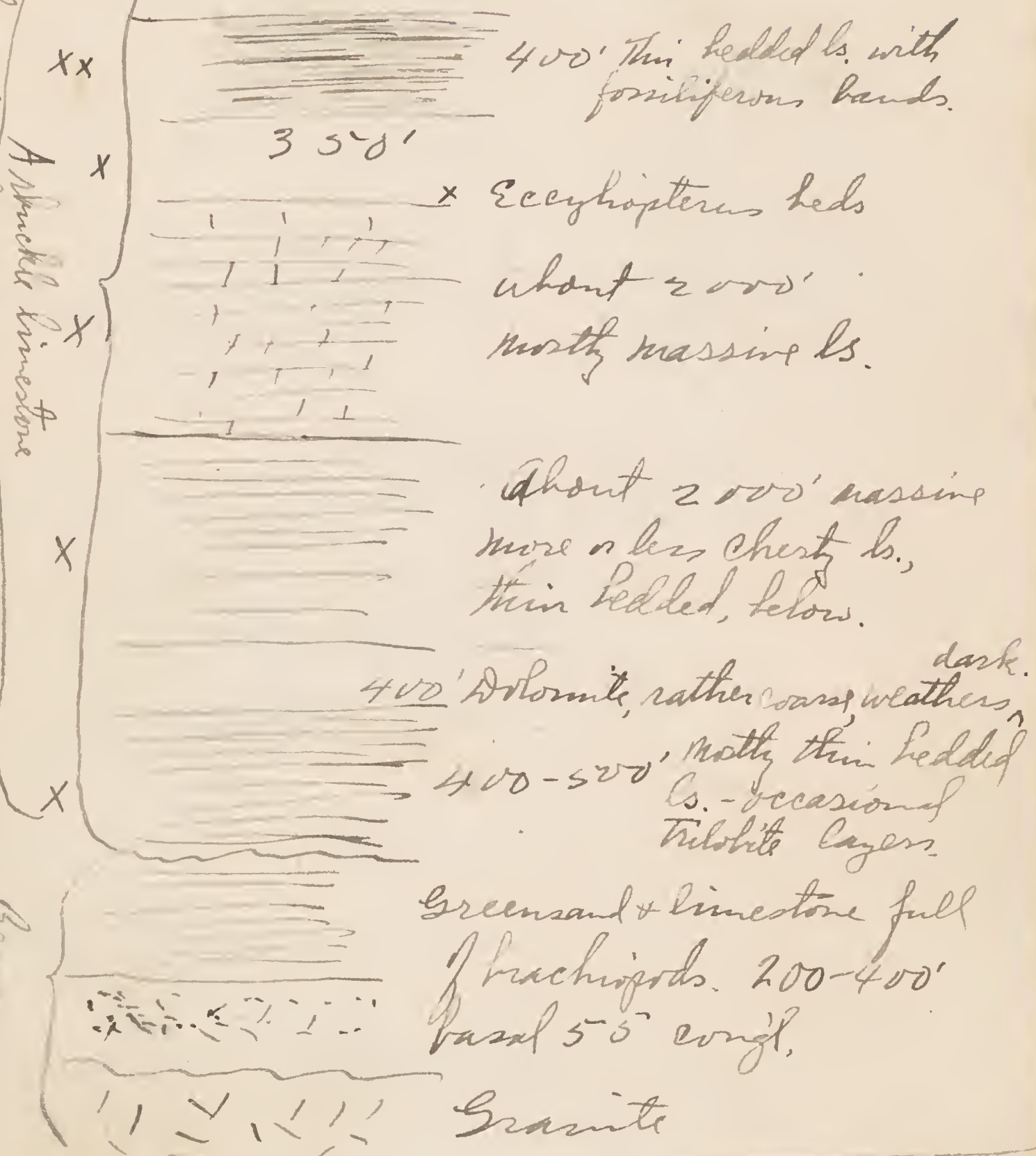
Ulrich's General Section  
 of Lower <sup>Superior</sup> ~~Ulrich's~~ south side  
 of Arcturion Mountains west of Washita  
 River.





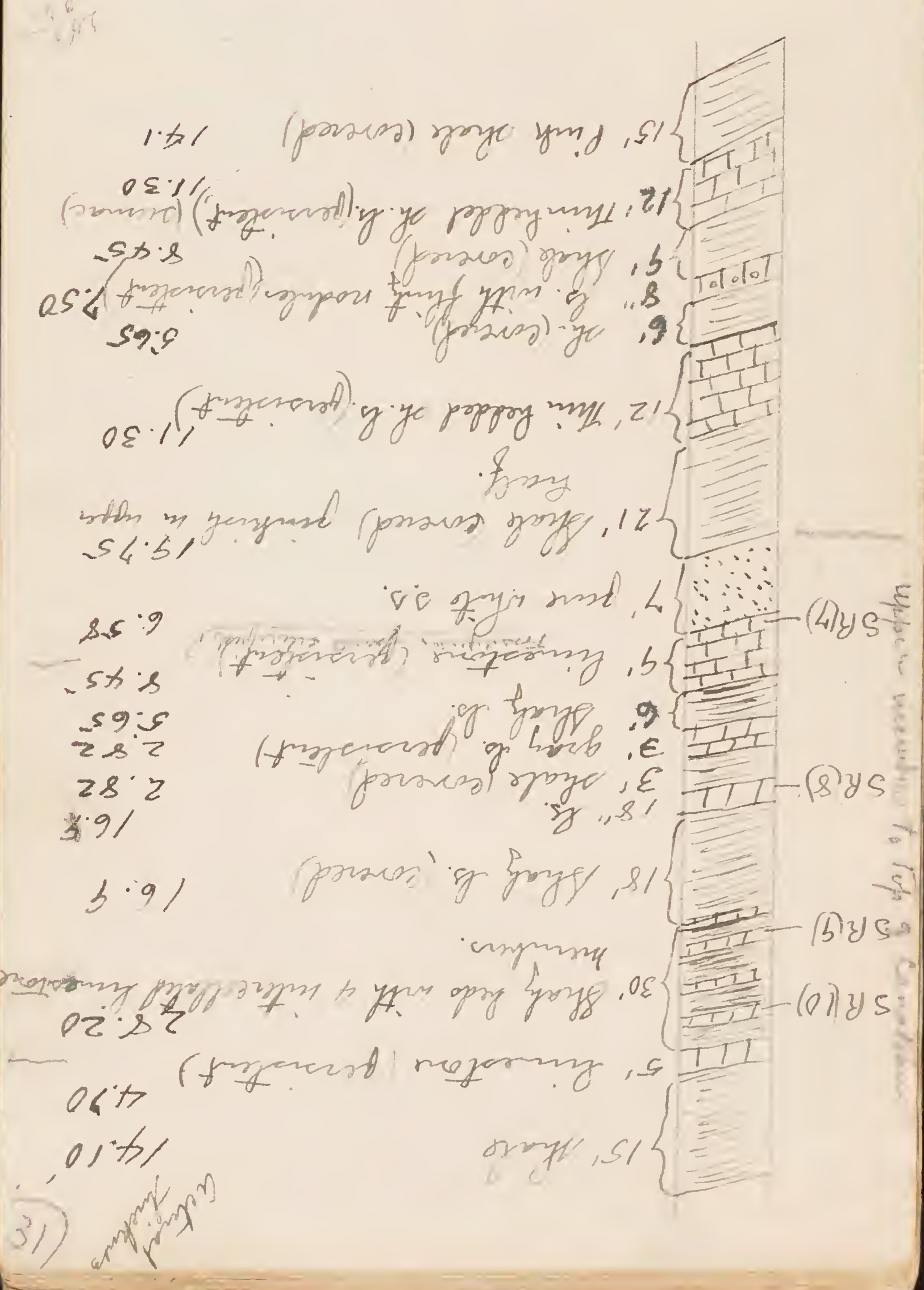
(Continued from previous page)

Collect from all parts but search most carefully those marked X.





1 - 17' red, gray ls, full of a rounded mass  
 rather common species of *Diploporites*.  
 The only other fossil recorded is a *Physalium*  
 of *Leptodonta*.  
 2 - 17' red, gray ls, full of a rounded mass  
 rather common species of *Diploporites*.  
 The only other fossil recorded is a *Physalium*  
 of *Leptodonta*.  
 3 - 17' red, gray ls, full of a rounded mass  
 rather common species of *Diploporites*.  
 The only other fossil recorded is a *Physalium*  
 of *Leptodonta*.  
 4 - 17' red, gray ls, full of a rounded mass  
 rather common species of *Diploporites*.  
 The only other fossil recorded is a *Physalium*  
 of *Leptodonta*.  
 5 - 17' red, gray ls, full of a rounded mass  
 rather common species of *Diploporites*.  
 The only other fossil recorded is a *Physalium*  
 of *Leptodonta*.  
 6 - 17' red, gray ls, full of a rounded mass  
 rather common species of *Diploporites*.  
 The only other fossil recorded is a *Physalium*  
 of *Leptodonta*.  
 7 - 17' red, gray ls, full of a rounded mass  
 rather common species of *Diploporites*.  
 The only other fossil recorded is a *Physalium*  
 of *Leptodonta*.  
 8 - 17' red, gray ls, full of a rounded mass  
 rather common species of *Diploporites*.  
 The only other fossil recorded is a *Physalium*  
 of *Leptodonta*.  
 9 - 17' red, gray ls, full of a rounded mass  
 rather common species of *Diploporites*.  
 The only other fossil recorded is a *Physalium*  
 of *Leptodonta*.





10 - Outcrop, light grey to, containing a few poorly preserved specimens of a large *Strophomena* and casts of a small, thin shelled *Strophomena*. *Strophomena* is the principal of the fossils.

11 - Another layer of granular grey to, with small *Strophomena* like fossils. *Strophomena* is the principal of the fossils.

12 to 17 approximately same as above.

12 - Grey sandstone like 11 with a few fossils in 17.

13 - Fine grained, in part light grey to, part of the same *Strophomena* fossils in 14 and with one *Strophomena* in the large one described.

14 - Grey sandstone, the great part of it is a fine grained, in part light grey to, part of the same *Strophomena* fossils in 14 and with one *Strophomena* in the large one described. *Strophomena* is the principal of the fossils.

4.70	5' limestone
11.30	12' Shaly limestone
.94	1' dark ls. (permeant)
5.65	6' ls.
3.76	4" Allison ls. fine grained.
28.20	30' Fossil ls. with thin <i>Strophomena</i>
2.82	3' Mammie ls.
16.9	18' Fossil ls. with large layers.
4.70	5' grey ss. (covered in part)
5.65	6' White ls. (permeant)
5.65	6' Fossil ls. (covered)
8.45	4' Fine grained white ss. with fine ls. near top.
.94	1' ls.
8.45	9' Fossil ls.
11.30	12' Shaly ls. somewhat siliceous.
3.76	4" thin bedded Allison limestone
2.82	3' White granular sand
16.9	18' ls. (permeant)
2.82	2' ls. (covered)
1.88	3' ls. (covered)
1.88	2' ls. (permeant)

33 (Total thickness)



19 - Same colored and broken  
pieces as in Angkor beds.

35' *thin bedded sh. ls.*  
 14.1' *thin bedded cong. ls. somewhat siliceous*  
 2.82' *sh. ls. (corrected)*  
 8" *siliceous ls. indurated cong.*  
 3' *sh. ls. (corrected)*  
 3' *sh. ls. (corrected)*  
 1' *siliceous ls. fossiliferous*  
 12' *thin bedded sh. to siliceous ls. cong.*  
 11.30' *in part.*  
 1' *dark grayish to thin bedded cong. ls.*  
 8.00' *fine ls. ls. (corrected)*  
 1' *argillaceous cong. ls.*  
 9' *corrected sh. ls.*  
 6" *yellowish fine ls.*  
 1' *sh. ls. (corrected)*  
 1' *cong. ls.*  
 6' *sh. ls.*  
 1' *ls. orthoceras & perforated*  
 4' *yellowish fine sh.*  
 1' *fine grained sandy limestone*  
 6' *sh. limestone (corrected)*  
 6' *sh. ls. (corrected)*  
 2' *sh.*  
 1' *fine grained fine gr. ls.*  
 6' *thin bedded ls.*  
 6' *fine sh. ls.*  
 4" *dark siliceous ls. cong.*  
 3.76'



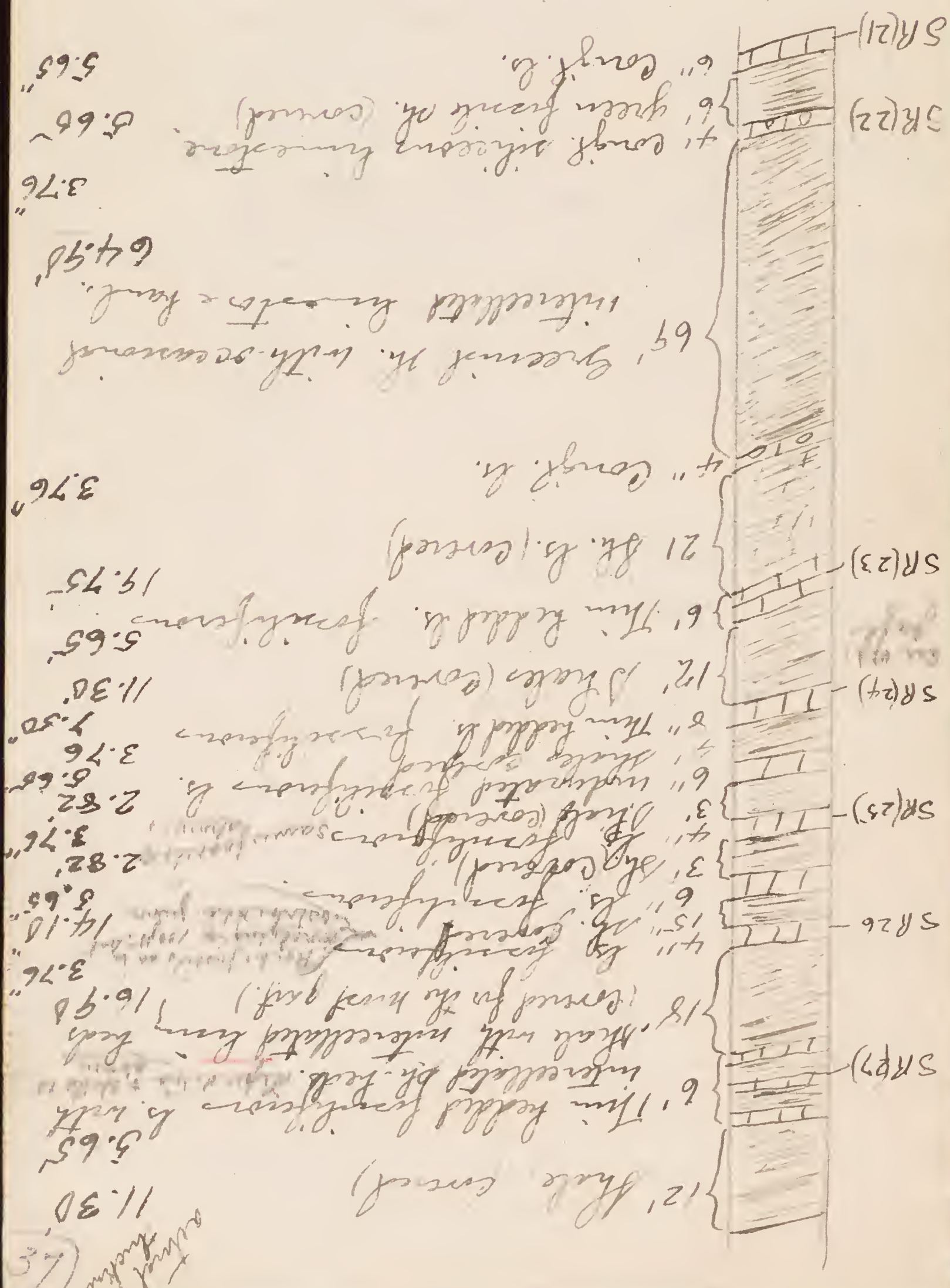
20 - Submerged gray ls. *Depressio* aff. *lucida*. *Massive* *stratified*. *Cl. truncatula* in 24.

21 - Same kind of rock as 20. Has the *Depressio* aff. *lucida* of no. 20 and higher beds. *Apertus* - group of *Orthis* in 24.

22 - conglomerate, gray siliceous ls. *Apertus*, small *Orthis* *Depressio*. *Tridacna* (ls), small *Orthis*, *gastropods*.

23 - Gray subcryst. ls. *Orthis*. A few *Orthis*, including the *Tridacna* of 24 and higher beds. *Apertus* group. Small *Orthis* including *ls. subcryst.*

24 - 150 ft above base of *Orthis*. *Orthis*, *Orthis*, *Orthis* light gray ls. *Orthis*, *Orthis*, *Orthis* - some in mass. *Orthis* about ls. 31, 33. *Orthis*, including *Orthis*, *Orthis*. *Orthis* *Orthis* ls.





20 - subcryst. gray ls.  
 Deposition off. base. minute tabular  
 Clasticum in 296.

21 - same kind I note as 22 -  
 Has the typical off. base of no. 23  
 24 and higher beds, Aporosa -  
 + group. of Ordov. in 24.

22 - conglomerate, gray siliceous ls.  
 Aporosites, small unid. tabular  
 Aporosites (sp), small unid. gastropods.

23 - gray subcryst. ls. fossil.  
 A few ostracodes, including the typical  
 of 24 and higher beds, Aporosites sp.  
 Small but relating to Aporosites

Conical gastropod shell.  
 containing *Neobolus vulgaris*.

Feb. 11  
 Young's  
 P. 53

2.88  
 2.88  
 16.9  
 3.76  
 3.39  
 16.9  
 3.76

Harpina  
 Chirocerinus

2446  
 1132  
 417  
 397  
 500

49 Has large  
 ramose Bryozoa in  
 condition too poor to  
 be determined

SR(296)  
 SR(297)  
 SR(30)  
 SR(31)  
 SR(32)

36' in the lower part, covered for the most part.  
 Shale beds with congl. ls. bands 33.5  
 see last page p. 40.

Young's  
 P. 53



2 species of *Aspidopteryx*  
The rock contains fossils of four  
genera. As a more systematic  
grouping is given. The latter contains  
about 100 species but the  
new fossils are few in number.

Agave  
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3rd - 2nd as in 32, but  
green with red-brown suff.  
juv. present.

*20" Thin bedded ls. with interbedded sh. at 18.8'*

5 R(29) - 11 + 6" length  
12" thin bedded sh. + sh. (congl)  
1.30'  
5.65"

42' Street with San Juan Bed. 1/8.  
34.38

411 High Street  
S.R.(25a)  
376

2.88 3' Thin bedded congl. ss.

18. 300 (actual) 16.9

411 English & French 5.76

36. Shale var. argill. 33.9

SR(30) 111 2" Aufzeichnung von 1.7.5

Handwritten notes and scribbles at the bottom of the page.

[illegible]

5/13/32

36 in the lower part, curved for the most part.

Shag heads with congt. b.   
 3394

(39)







33

1. *Stenobothrus*  
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34 = 1925 + 1000000

John Forman

Diagenetic action  
thin bedded, light fine grained  
originally to be seen  
in some beds in present  
state. From: Massachusetts.  
Worcester, Bristol  
Beverly, Braintree, etc.  
as well as those of the  
Mass. & edges of it. not  
seen outcropping on surface  
of fragments of fragments  
it: seen in many places such.

69.159

1735

in upper part. 40 miles to N. of J.

108

(H) 701  
Top road  
in Redwood Cr. is.  
Large black spots abundant  
101-50  
Edward M. Brown

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94'  
 8.45'  
 5.65'  
 22.30'

22.30'

5.65'

6' *subcrystalline ls.* in upper part of igneous

12' greenish sh.

1' sh. ls. with much organic

6' greenish sh. mostly by head (weak)

2' sh. ls.

3' greenish sh.

7' sh. ls.

15' greenish sh.

21' sh. micaceous sh.

6' sh. greenish

33' thin bedded *subcrystalline* ls.

45' sh. ls. with green sh.







13435

50. 48

3000



144.1

36.75

8.50

79.00

11.30

3.7

19.75

3.7

141.00

81.75 = Bush 55.

---

395.45

4

Coal

~~Upper~~ Twp Creek

56

8

---

44



A hand-drawn sketch of a vertical rectangular object, possibly a book cover or folder. The drawing is oriented vertically. On the left side, there are several horizontal lines and some faint, illegible markings. In the center, there is a large, irregular shape that looks like a stylized letter 'E' or a similar symbol. To the right of this central shape, there are several horizontal lines and some faint, illegible markings. At the bottom of the drawing, there is a small, rectangular area with a dotted pattern. The overall style is that of a rough, hand-drawn sketch.



5 R. 51 To 60, incl. = Coal mostly barren.

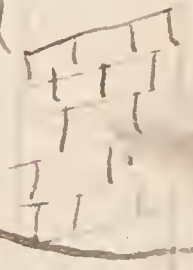
*Donchodroma* *caerulea* *caerulea* *caerulea* *caerulea*  
*caerulea* *caerulea* *caerulea* *caerulea* *caerulea*  
*caerulea* *caerulea* *caerulea* *caerulea* *caerulea*

*[Faint handwritten notes, possibly bleed-through from the reverse side]*

33' Thin bedded sh. ls. 31.00  
59' zone = 160 ft. beds above. 53 = layer to gillie beds  
thin yellowish straphan, straphanella (small)  
15' sh. ls. thin bedded 14.1  
60 = R. b. thin bedded, straphanella, straphanella  
59 = (straphanella - green str. thin in 88 - flat, no beds  
small, feeding beds.  
31' covered sh. 36.75  
58 = Cliftonia very abundant - R. b. thin bedded on contact  
9' Thin bedded sh. ls. 8.50  
(57 - only a Homotrypa - white & punctate)  
55 Anodonta in white, straphanella, straphanella  
(54 - covered sh. 79.00  
84' covered sh. thin bedded ls. 79.00  
(54a straphanella (greenish), R. b. thin bedded  
thin bedded sh. ls. 11.50  
4" Bregoria  
21' green sh. 19.75  
4" ls. 3.7"  
150' (covered) sh. ls. 141.00  
SR(62)



"Springs Section."  
 Brimmon and upper clay member  
 of white limestone. N.W. 1/4 Sec. 30  
 T. 2 S., R. 2 E. Cal. Road. 2 1/2 - 3 miles  
 north of Springs. Made at 15 to 20 ft  
 of rock top. Ends where ship creek  
 cuts into dip 90°. Figures in feet  
 inches not actual thickness but that of outcropping  
 surface



Base of Vicks. massive ls.

12' thin bedded ls. no fossils. 11.50

72' covered sh. thin bedded ls. 67.75



R.W. 50(7) 2/3 way across at h. 1300 ft  
 & gastropods large.

R.W. 50(6) Top of shale with intercalated  
 ls. (0.5-1-2) next to prominent sh. ls.

R.W. 50(5) 400 yds a.w. (11) 200(3)  
 length in section about the horizon of  
 but 35 in spring side

R.W. 50(4) 300 yds above south of (above)  
 in small house

R.W. 50(3) 10' above (2) in thin  
 bedded ls. Zephrentis, etc. Zephrentis

R.W. 50(2) 25' higher than (1) in thin  
 bedded ls. some fossils in (1) with  
 ls. shells

R.W. 50(1) Base of Greenish sh  
 thin bedded ls. of Spring Section

8R(33) Zephrentis n. sp. etc. Zephrentis  
 Zephrentis n. sp. etc. Zephrentis

Section West Spring Creek  
 3 miles by section east (Sh/a)  
 provide sh. by Miles. July 3 1902.

R.W. 50.C. 5 - The n. sp. Nevada lenticular  
 Zephrentis n. sp. Zephrentis n. sp.  
 Zephrentis n. sp. Zephrentis n. sp.

R.W. 50.C. 6 - 1. Zephrentis n. sp. (remains) Zephrentis n. sp.  
 a large n. sp. - crowded with

R.W. 50 - 7 - The 6x8 box so marked contains only  
 some of the Zephrentis and Zephrentis lenticular

Zephrentis n. sp. Zephrentis n. sp. Zephrentis n. sp.  
 Zephrentis n. sp. Zephrentis n. sp. Zephrentis n. sp.

Zephrentis n. sp. Zephrentis n. sp. Zephrentis n. sp.  
 Zephrentis n. sp. Zephrentis n. sp. Zephrentis n. sp.



R.W.D. (28) in the reddish lime

stone in Red Creek, northern beds.

R.W.D. (27) above 15th. No. heavy beds  
in bed of creek.

R.W.D. (26) Greenish shales  
with thin whitebedded  
limestone fossils

R.W.D. (24) collected from top  
of long ridges. 25th. 26

R.W.D. (23)

R.W.D. (22)

R.W.D. (21) Great covering small  
over and above. thin bedded ls. just below is

R.W.D. (20) thin bedded ls. just below  
present 25. (4th)

R.W.D. (19) edge of heavy ls.

R.W.D. (18) edge of heavy ls.

R.W.D. (17) thin shaly limestone  
in green sh. 3. way

Probably same horizon as 3-4-5, 15th. 16th. 17th.

R.W.D. (16) 2/3 way across green  
shale with limestone

much with thin, 15th. 16th. 17th. 18th. 19th. 20th. 21st. 22nd. 23rd. 24th. 25th. 26th. 27th. 28th. 29th. 30th. 31st. 32nd. 33rd. 34th. 35th. 36th. 37th. 38th. 39th. 40th. 41st. 42nd. 43rd. 44th. 45th. 46th. 47th. 48th. 49th. 50th. 51st. 52nd. 53rd. 54th. 55th. 56th. 57th. 58th. 59th. 60th. 61st. 62nd. 63rd. 64th. 65th. 66th. 67th. 68th. 69th. 70th. 71st. 72nd. 73rd. 74th. 75th. 76th. 77th. 78th. 79th. 80th. 81st. 82nd. 83rd. 84th. 85th. 86th. 87th. 88th. 89th. 90th. 91st. 92nd. 93rd. 94th. 95th. 96th. 97th. 98th. 99th. 100th.

R.W.D. (15)

R.W.D. (14) thin bedded limestone

R.W.D. (13)

R.W.D. (12) in green sh. 6' 1/2  
in small greenish limestone

R.W.D. (11)

R.W.D. (10) chiefly orthoceras, oncoseras,  
+ fish changed slabs in green  
shale. These were collected  
from a small gulf, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st, 32nd, 33rd, 34th, 35th, 36th, 37th, 38th, 39th, 40th, 41st, 42nd, 43rd, 44th, 45th, 46th, 47th, 48th, 49th, 50th, 51st, 52nd, 53rd, 54th, 55th, 56th, 57th, 58th, 59th, 60th, 61st, 62nd, 63rd, 64th, 65th, 66th, 67th, 68th, 69th, 70th, 71st, 72nd, 73rd, 74th, 75th, 76th, 77th, 78th, 79th, 80th, 81st, 82nd, 83rd, 84th, 85th, 86th, 87th, 88th, 89th, 90th, 91st, 92nd, 93rd, 94th, 95th, 96th, 97th, 98th, 99th, 100th.

R.W.D. (9)

R.W.D. (8) orthoceras, oncoseras, large  
green shale.

200 ft. to 250 ft. 2 species of orthoceras, oncoseras, large green shale.



Section, West Spring Creek

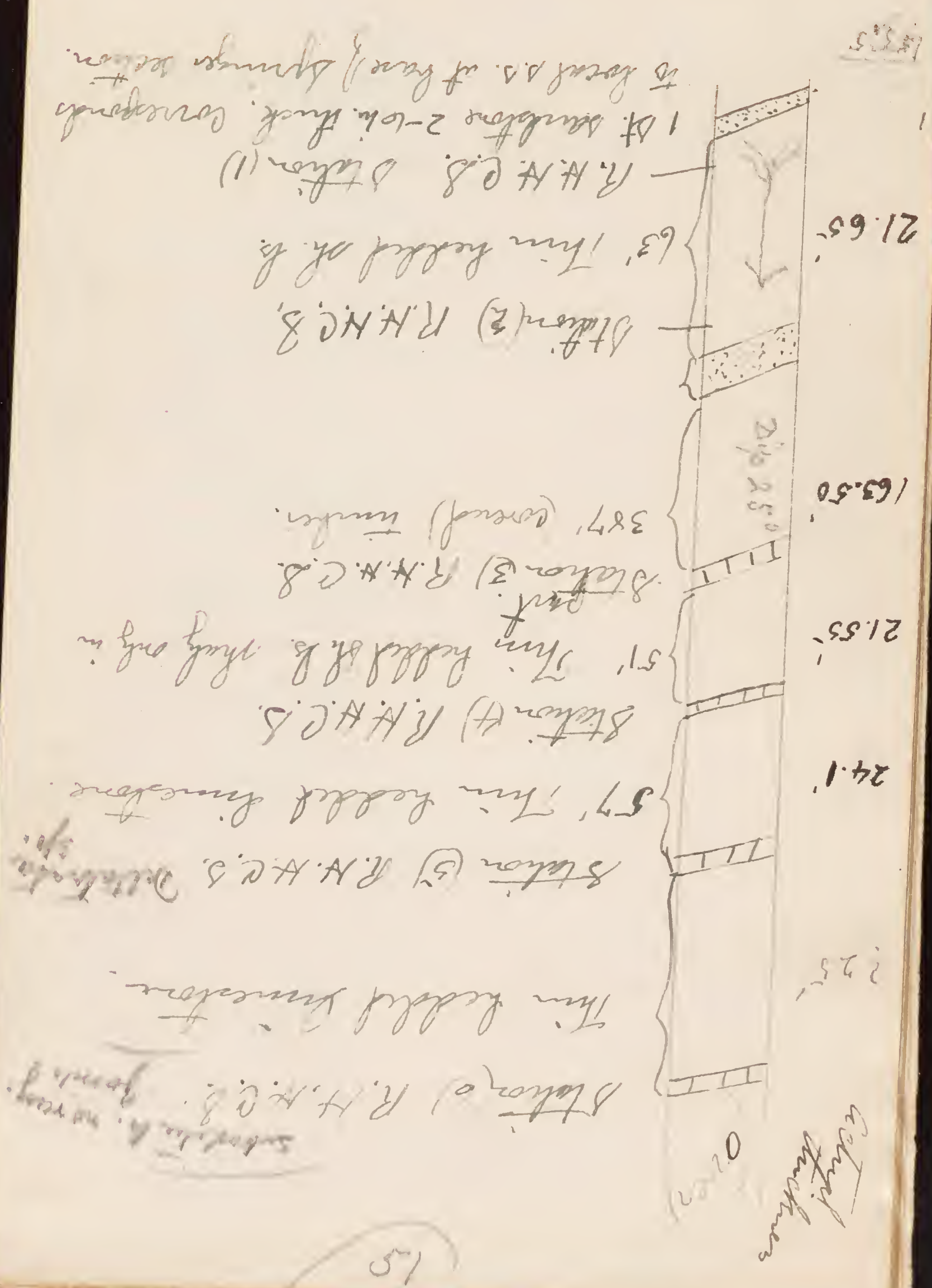
5000 ft. 3 miles east of Elk, W. Va.  
 July 1908. 3 miles east of Elk, W. Va.

July 1-3 1908. [Red rain is  
 correlated with Spruce section.]

R.W. 80 (P. 9) Top most ledge thin bedded  
 ls. Transition zone. Full of Bryozoa  
 & filled upon shell. Exposed in creek bed.

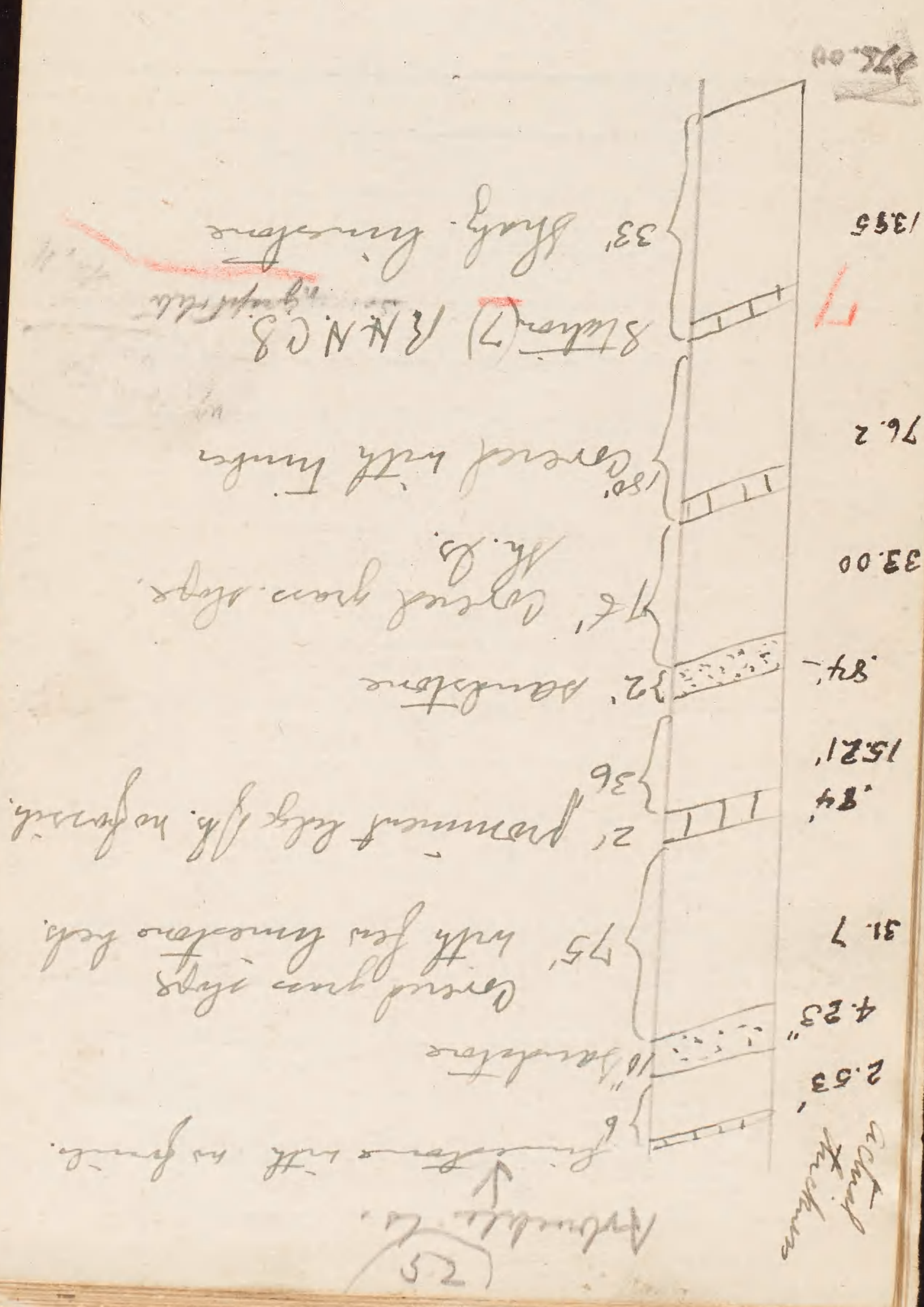


Henry House Creek Section  
W. R. R. Co. July 87 - 1915  
 dip 25°





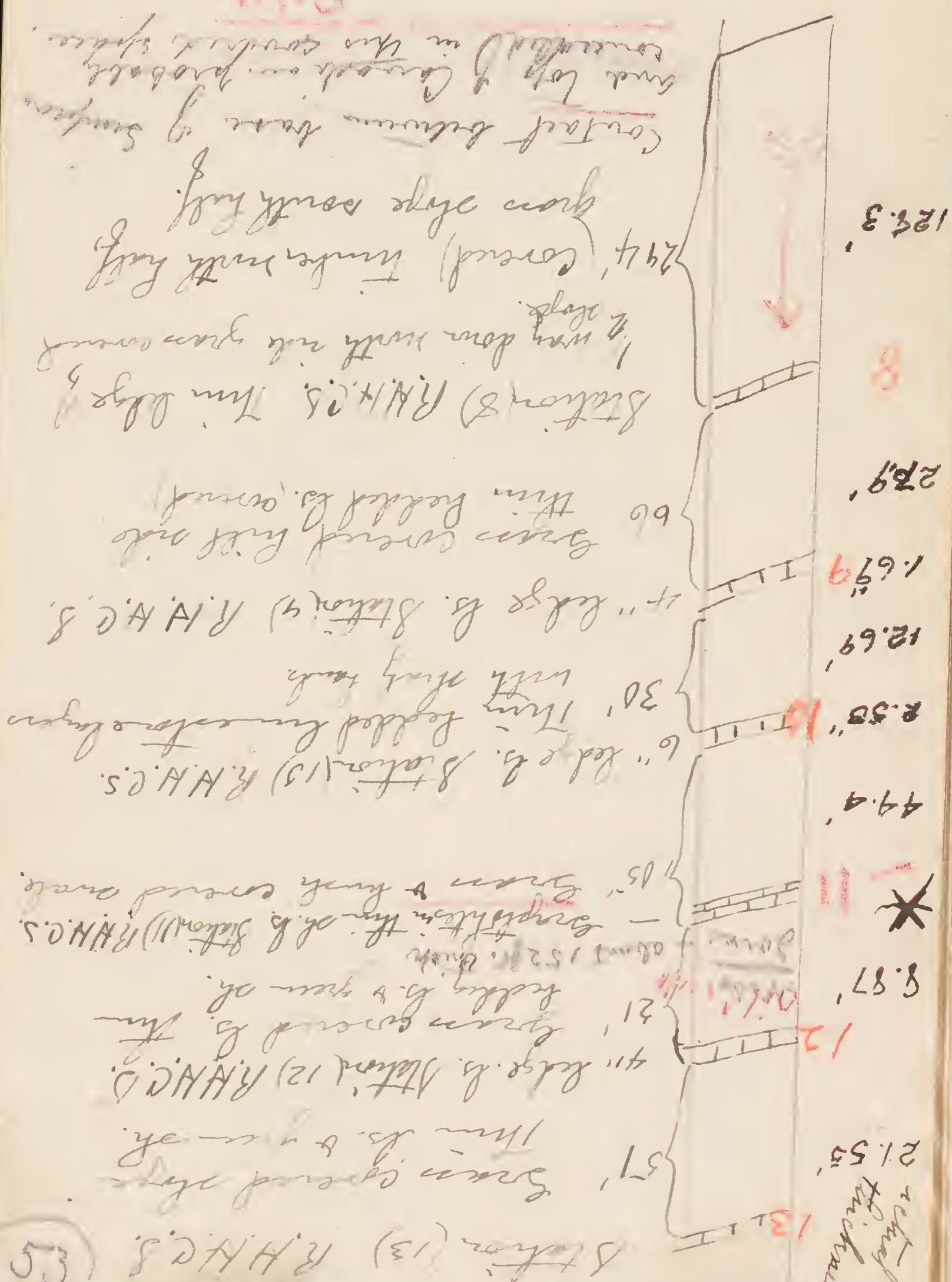
*Faint handwritten notes at the top of the page, possibly describing geological context or survey details.*





Sta. 10 has Ostrac. granulosus, Zeph. etc.  
+ Apurulus

*(Faint handwritten notes, possibly bleed-through from the reverse side.)*





Sta 18 - Abundant  
Panicum sp.  
Eragrostis sp.  
Pennisetum sp.  
Sporobolus sp.  
Stenotaphrum sp.  
Cynodon dactylon  
Lycopodium obscurum  
Selaginella selaginoides  
Polypodium vulgare  
Adiantum species

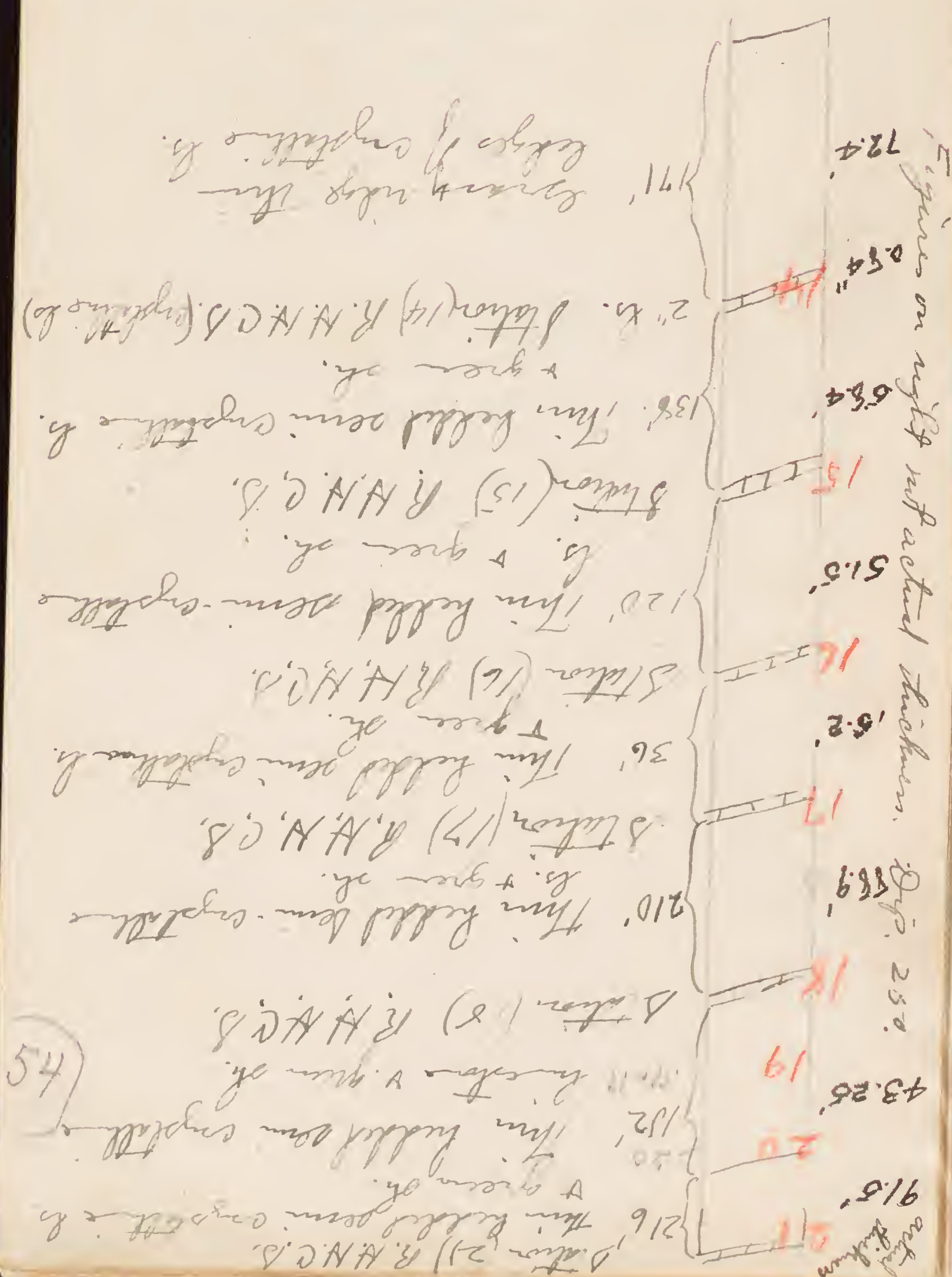
[illegible]

Sta. 16. *Chlamydomonas* dorsal side only  
*Cyrtosira* sp. *reticulatissima*  
also *Thalassiosira* in *Chlamydomonas* 9.5.17.

*Dryopteris*  
*filamentosa* var. *brevifolia*  
*Diarrhoea*? small branch  
 dry, not dried  
 deposited 2 sp. both no. 875, 19

Sta. 14, "Domestic" *Probatum*  
*Robusta vulgata*  
*Leontideae* - the order  
*Epilobium* - the order  
 no in English genus

1895-1896





Note: The thin bedded green argillaceous  
 limestone with thin bands of greenish  
 shale appears in vicinity of mile  
 down the creek. Fossils, 4 lots.  
 Fossils above were collected from it.

Four lots of fossils from the bedded  
 gray limestone with thin bands of  
 green shale. Just below that limestone  
 having big gastropods. Collected from  
 small gull on east bank of Henry House  
 Creek. Collected 7 1/2

#  
 1 lot, gastropods from N.B. 15' above base.

#  
 2 lots from green sh. below 3rd lot. 10' thick

#  
 2 lots of shale, 27 pieces, fossils top of lot 1  
 Henry House Creek section. Collected 4 1/2

#  
 300 yds. west of Henry House Creek. Collected.  
 below base of ~~Henry House~~ Vols. Becoming

3 packages from top of ~~Henry House~~ just  
 [Red made collected with those in Sprague's section] Dep 250  
 Henry House Creek section July 8-9, 1908.  
 Collected 7 1/2



Collected 3 lots of fossils from  
 thin bedded *Trilobites* layers  
 in lower Cambrian beneath det. 450'  
*Calymene* ~~by~~ *Chela*  
 Collected 7, '18

July 11 '18  
 Made collection green shale & thin  
 bedded ls. upper Reagan, in west part  
 of E. Ryan Ranch house on Hwy. back -  
 just west of East Imperial Hills.  
 Collected 7, '18

July 11 '18  
 Made collection from green shale &  
 thin bedded ls. upper Reagan, approximately  
 1/4 mile west of E. Ryan Ranch  
 house, south side west Imperial  
 Hwy. N.W. Sec. 25 T.15, R.13.  
 #

July 11 '18  
 Made small collection from carbonate  
 Sec. 7, 125, R.13. *Stenoceras*, etc.  
 #

July 11 '18  
 Made small collection from the carbonate  
 ls. on Henry House back SW 1/4  
 Sec. 5, T.25, R.13. 1st part north  
 of line from Henry House on fence running  
 by creek. *Stenoceras*, *Trilobites* fragments.  
 Very quartzified, siliceous, dip 0.5 to north.  
 #



Actual  
Thickness

76.75'

78' Greenish shale, thin bedded ls.

57' Thin bedded ls. approaching massive limestone.

119.1' 121' Green shale

118.1' 120' Sandstone even bedded in place. 15' above limy.

233' 237' Green shale and thin bedded limestone occasionally

97.5' 99' Mudstone and shale.

331' 336' Green shale and thin bedded limestone, limestone more prominent in upper part. fossiliferous.

331' 336' Green shale and thin bedded limestone, limestone more prominent in upper part. fossiliferous.

Section on Coal Creek east of Spanglers Creek.

Fault at 317'

56.2'

56.2'

56.2'

56.2'

56.2'

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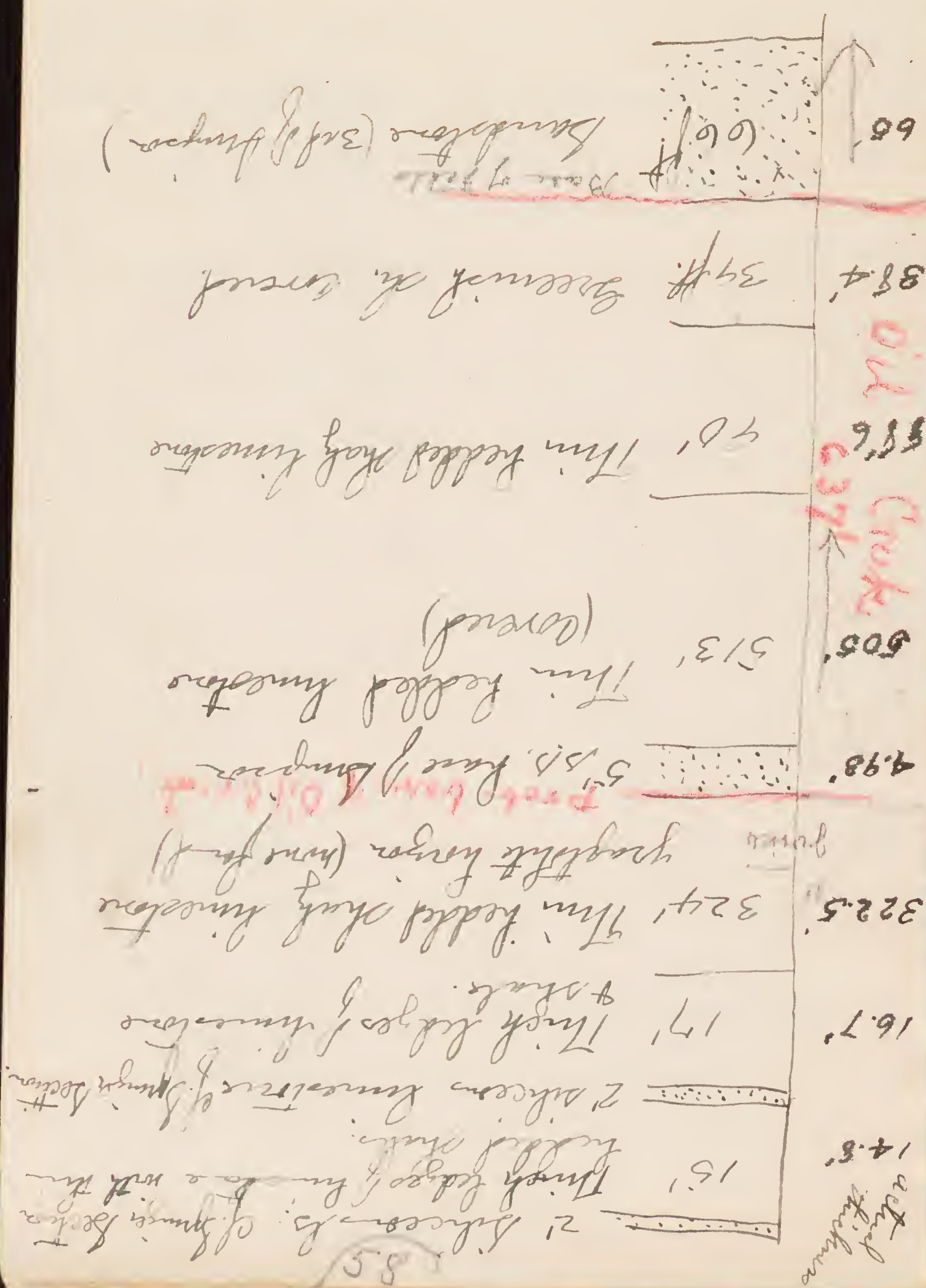
56.2'

56.2'

56.2'



Oil Creek from 637-85





Section made along Spring  
 River bench road on Corral Creek  
 Spring & upper washable.  
 Measurements only here made.  
 Aug 78-850  
 alt. 7475.

Colony  
 Franchises

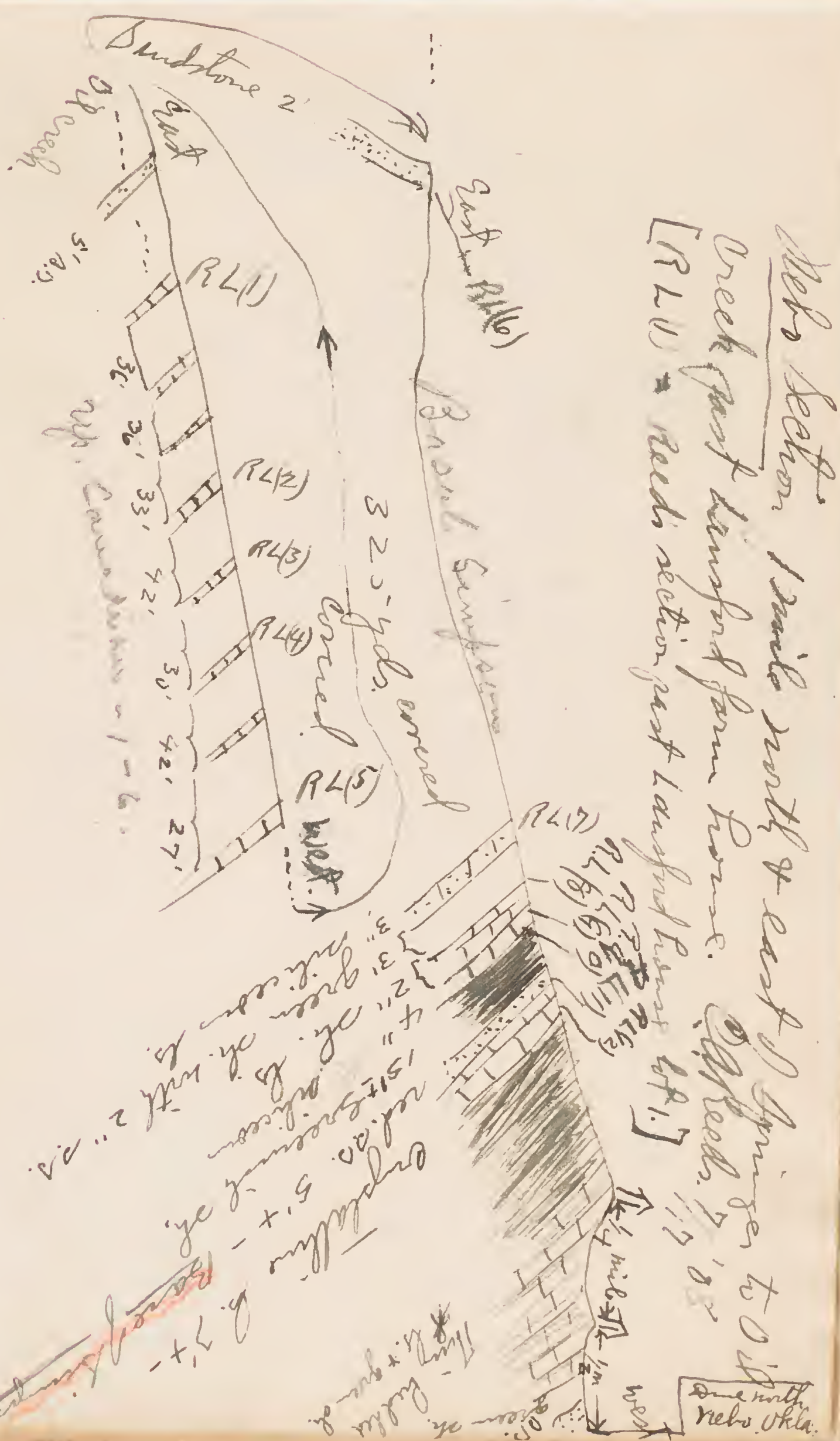
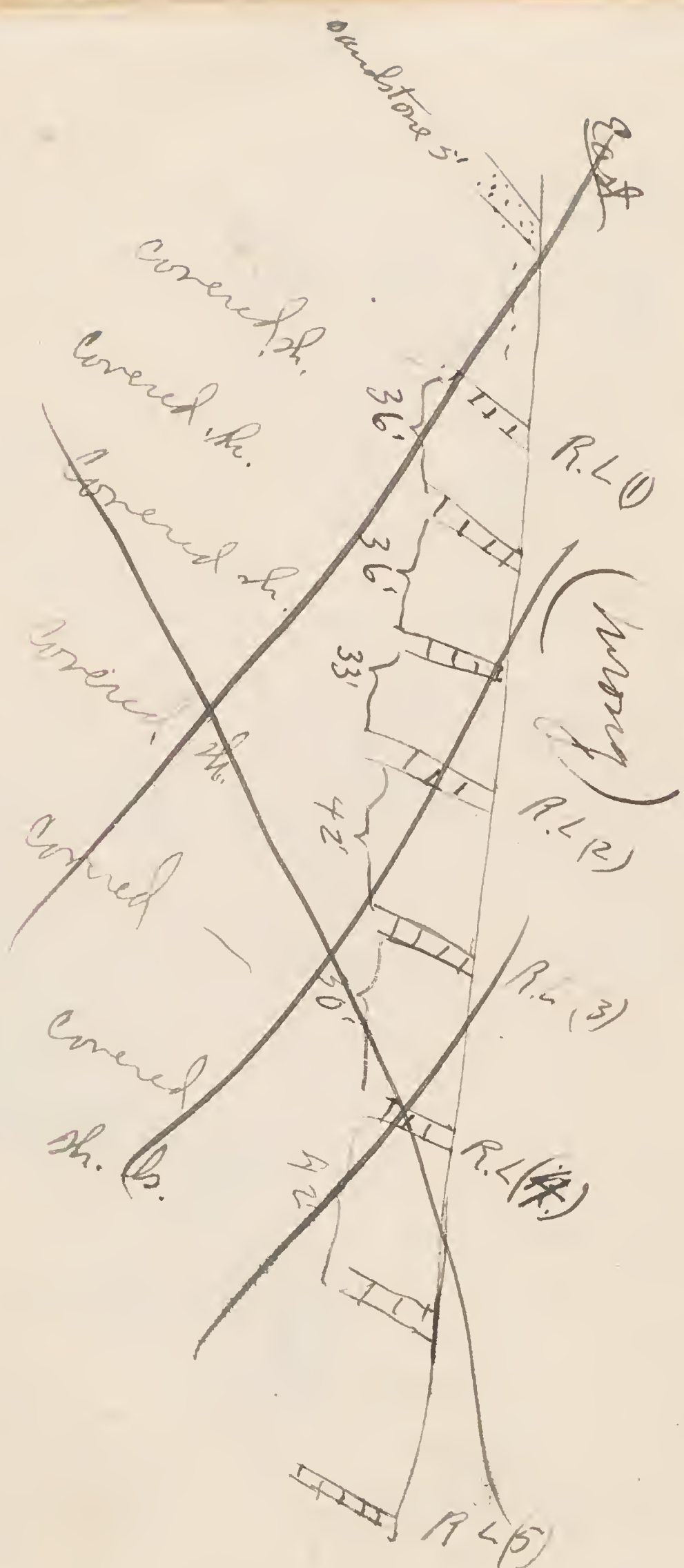
71' 14.8'  
 15' High ledge of limestone  
 with thin bedded shales.  
 72' Thin fossiliferous shale with  
 occasional thin & thick  
 layers of limestone.  
 (Spring) 2' sandstone  
 15' High ledge of limestone  
 with thin bedded shales.  
 71' 14.8'

Note: The thick bedded shale & heavy  
 fossils  
 ledge of limestone continues on  
 the side to the north. [I was not  
 not permit me to continue if further.]  
 -gate on road.









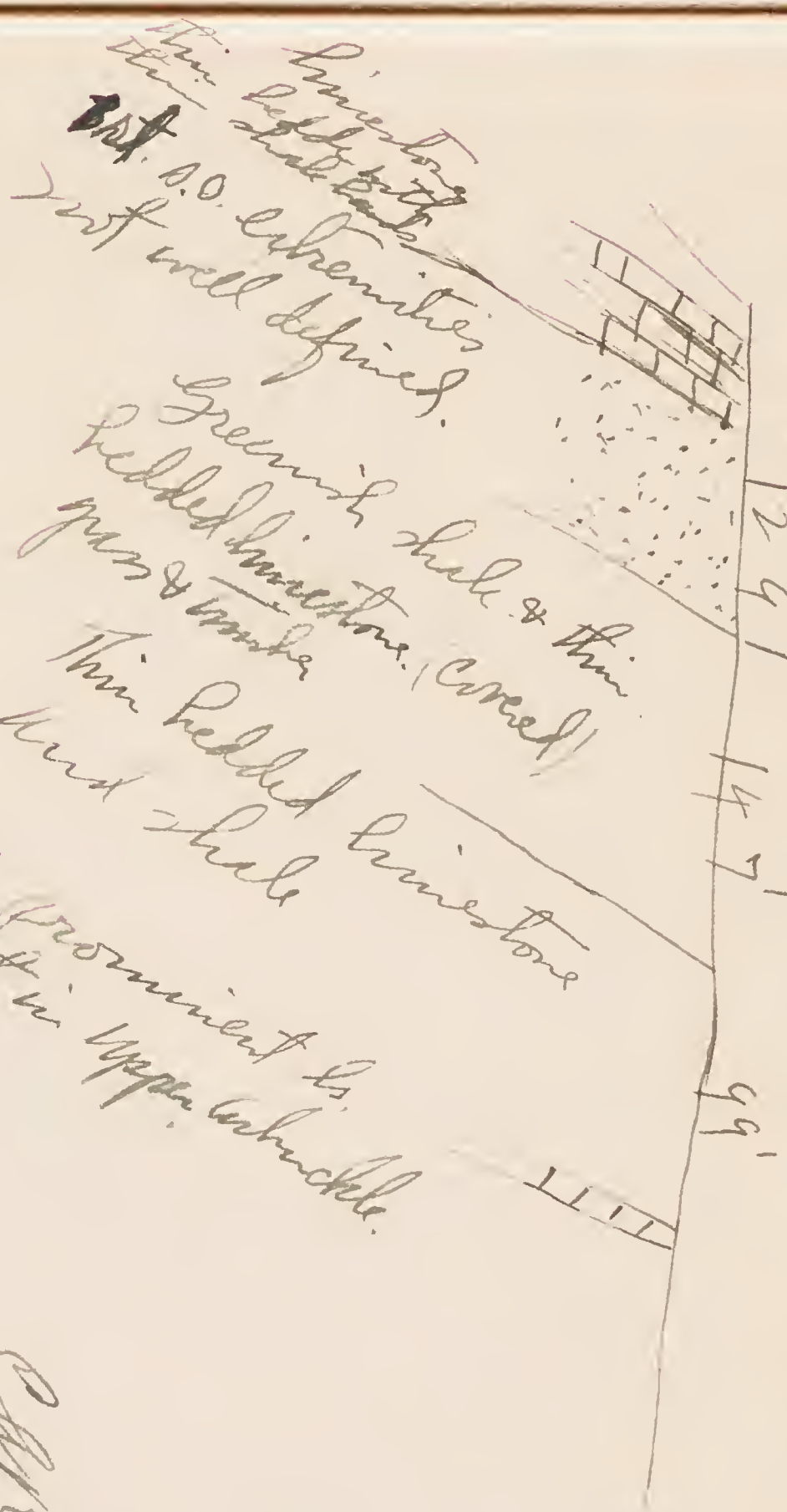
Webb Section 1 mile north & east of Springs to O. S. Creek just beyond farm house. *At Reed. 7' 18'*  
[IRLW - Reed section just beyond house 48 ft.] *↑ 11' 18'*  
[one north Webb Okla.]

Done north  
Nebo. Okla.



Base of  
Springer

Upper Cincinnati.



Chickadee.

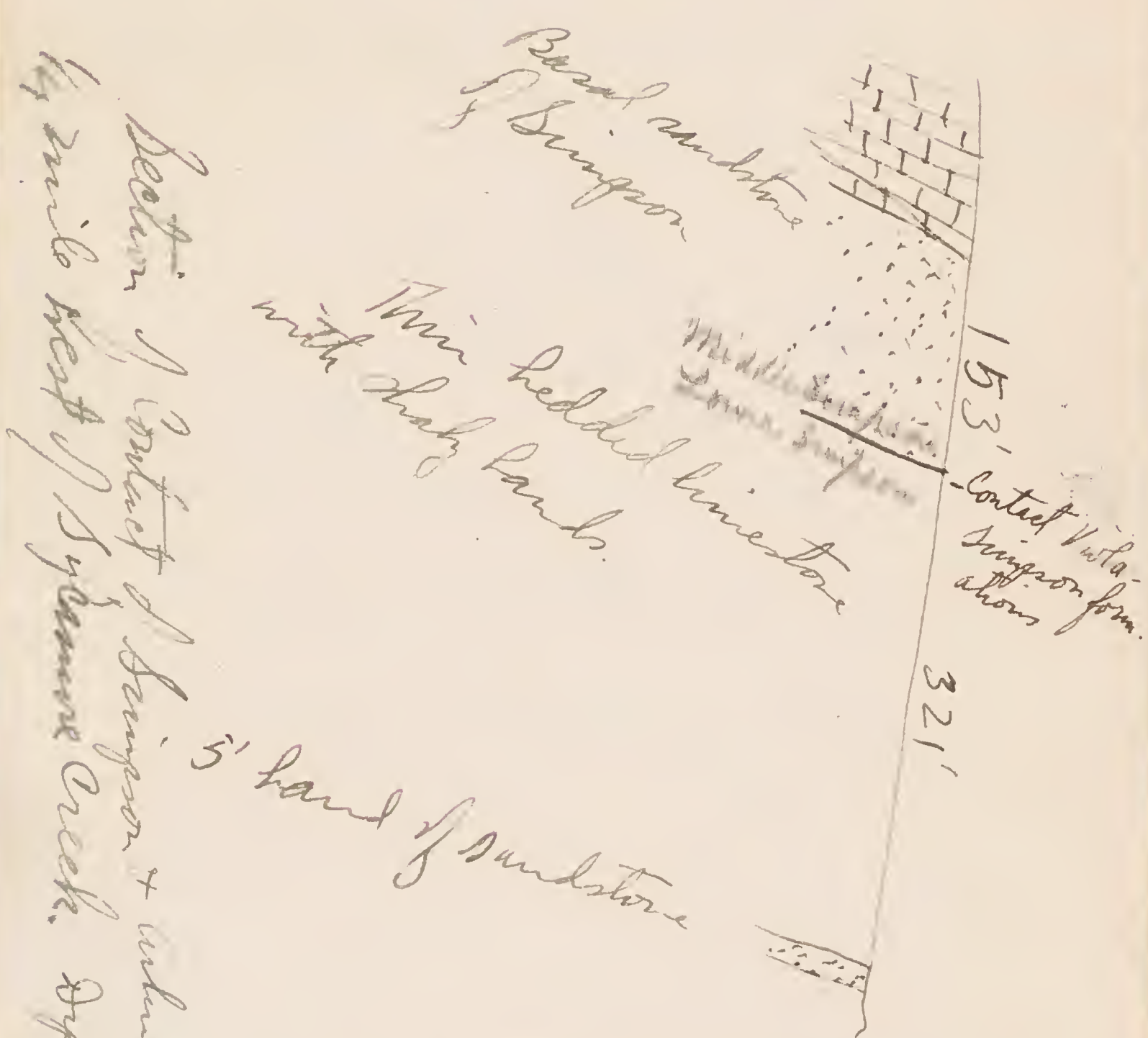
18' 08"

Section along road from Wyatt to Baum  
over contact of Springer & Cincinnati formations.  
Note: Not especially good since contact is not exposed.



On 24 creek the thick bedded sandstone at the base of the Simpson was noticed in the bed of the creek. The strata, however, are covered 75' of this sandstone could be seen but the rest the other 76' which is without doubt present, is covered. The ~~base of~~ the upper bed of the strata where also covered by 'wash material' so that did not endeavor to make section.

Rode down to the oil springs 3 in number, which arise from the Woodford 11 gal. of oil can be measured 11 of them during the course of day.



Section of contact of Simpson & under the sand creek 1/4 mile west of Syracuse Creek. Dip 75° S



Basal Simpson  
sandstone.

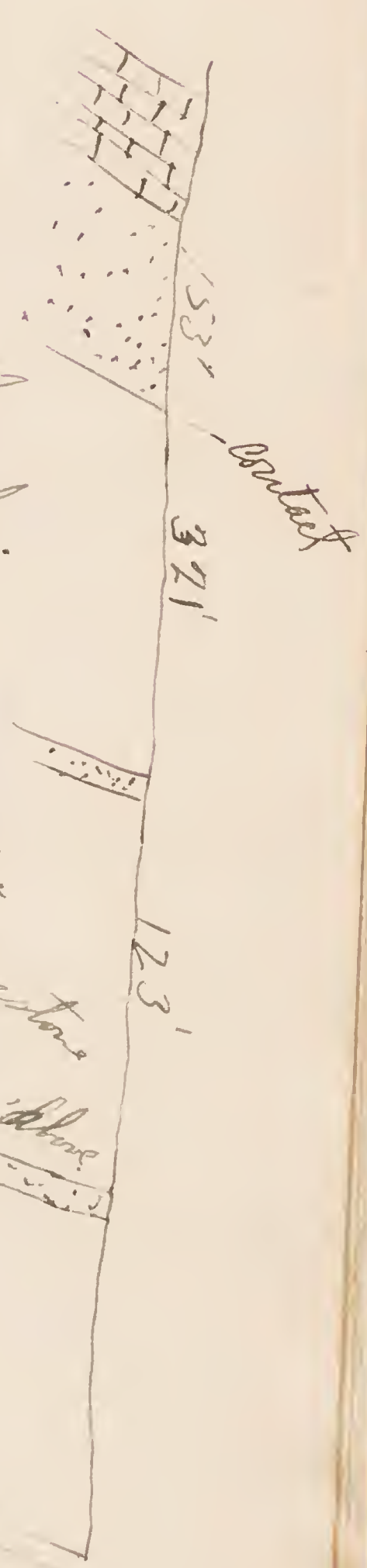
Thin bedded l. b.  
with shaly bands.

5' band of sandstone

Thin bedded limestone  
with shaly bands. The limestone  
bands are thicker and more  
persistent than those in the 32' above

3' of sandstone

5-7' sandstone &



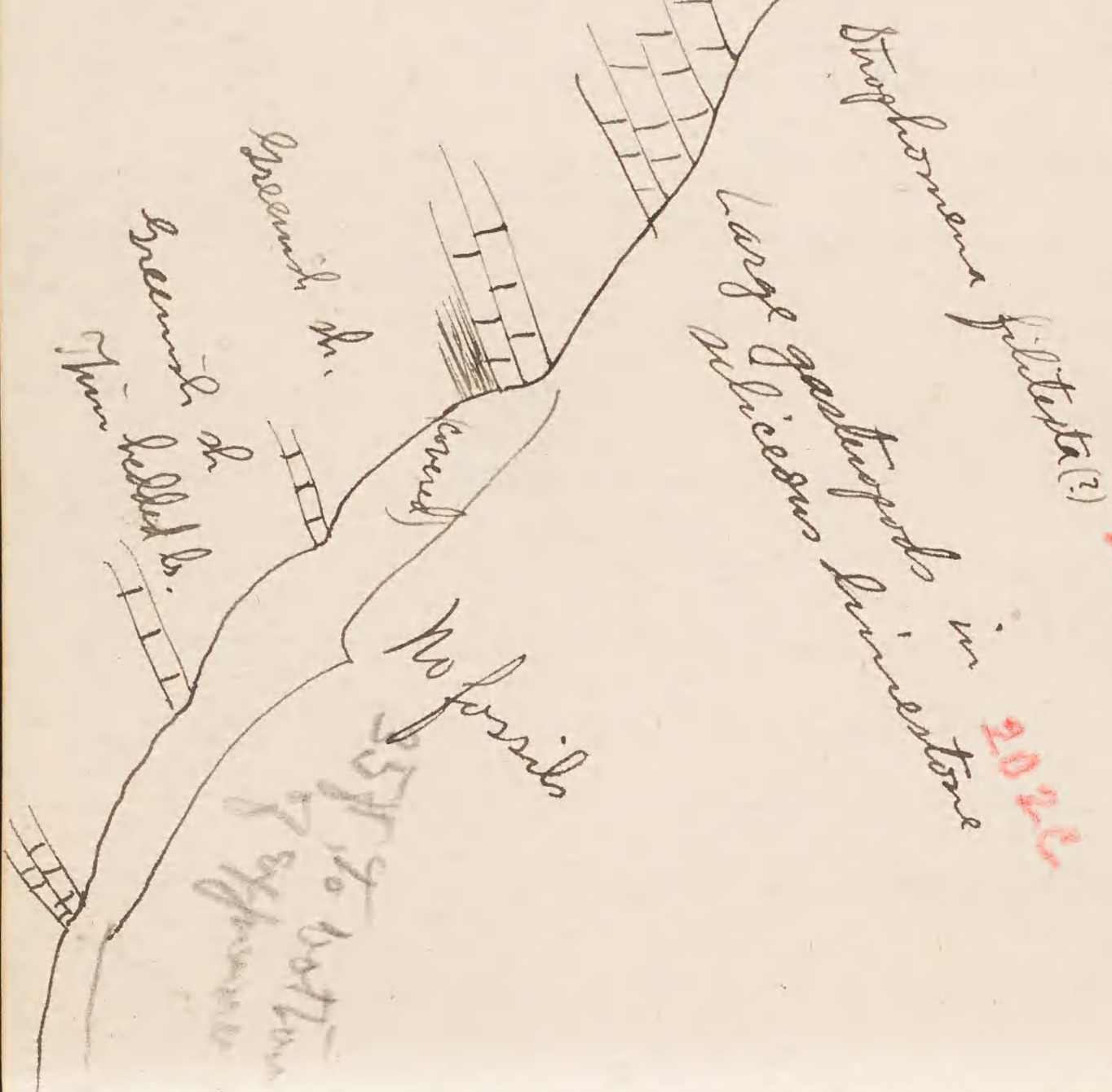
Section 1/4 mile east of Mycaine creek  
Simpson - Culbucke contact south side  
Culbucke into shls. Cal Rock 7' 18' 08'



E  
 by water  
 Camp, Cambridge, 2017  
 2022

Section of  
 Vista-Simpson transition  
 series 1 mile S.W.  
 Dick M. & Clark ranch houses.  
 M.B. 7/30 1908

Approximately 10 miles  
 northwest of Ames, Iowa



Siliceous limestone



201

Chicks 7 '88

10.65.

30  
107



Section 1 mile west of Millcreek.  
south side Unkuck Mt.

Transition series, Unkuck-Simpson  
formations. Colquhoun 7, 1908.

Top beds "Burgin" ss. (contains 2. bitum. & many smaller ostracods.)  
Sandstone 53 paces, very fine white sand. -  
7 paces, thin bedded ls. ledges + - 6 in thick.

Note: Thicker in upper part while in lower  
fine yellow shale partings and thin  
beds. R M (1) & R M (2)

2 paces, thin bedded ls. with Brachiopods.

R M (3)

28 paces, grass covered slope  
bedded limestone. R M (4) to R M (7a)

3' massive to fissile shaly ls. } No fossils.

3' covered fissile shale

2' thin bedded ls

8 1/2 paces (covered) shale with thin bands  
of limestone. R M (8)

1' blue gray limestone R M (9)

Deposition & tall gastropod

3 paces very thin bedded sh.

20" shaly limestone.

1 1/2 paces, covered shale.

1 pace gray limestone

2 paces covered shale

15" thin bedded ls.

1 pace covered shale.

20" dark pitted ls. R M (10)

1 pace (covered) shale.

4" laminated, yellowish sh. indurated

2 paces (covered) shale

1' shaly ls.

2 paces (covered) shale

6 paces thin bedded yellowish shale

9" ledge of yellow shale, indurated, streaked

21 paces yellow shale, covered for

the most part.

= 115 paces north of (below)

"Burgin" Simpson basal sandstone.

Note: The strata exposed here dip 80°  
to the south. (covered)







- 11 Unites generalized - 27, 28
- 10 Springer 29 to 47
- 12 Up. Arbuckle 29 to 35, 10, 64, 67
- 9 Postville - 3 m. east - 48 to 49
- 3<sup>a</sup> Henry House Creek 51 to 56
- 8 Ozarkian " " 56
- 3 Comb. Creek east of Springer 57-59
- 6 Nebo - north of " " 60-61.
- 15 Hyatt - Danna 62 to 63
- 7 Old Creek - Lower Simpson  
x. Up. Arbuckle - not yet 62 1/2
- 2 Contact Arbuckle & Simpson 63 1/2
- 1 Basal ss. of Simpson 63
- 13 Up. Arbuckle Graph. p. 10, July 13
- 14 " " " " p. 14.
- 4 Mt. Eliza ranch house 65-66  
near Springfield
- 5 Mill Creek (Up. Arbuckle) 67-68



